

Message Text

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C O N F I D E N T I A L STATE 125395

EXCON

E.O. 11652: XGDS-1

TAGS: ESTC, US, RO, GW, FR

SUBJECT: US CONTACT PRINTER TO ROMANIA - IL 1355

REF: A) COCOM DOC.(75)608

B) OECD PARIS 09530,4/15/75

C) OECD PARIS 10966, 4/30/75

1) US TECHNICAL EXPERTS CONSIDER THAT THIS DEVICE (REF A) IS SPECIFICALLY DESIGNED FOR, AND SOLD ONLY FOR USE IN THE REPRODUCTION OF SEMICONDUCTOR MASKS. HOWEVER, IF ANY OTHER MASK REPRODUCTION REQUIREMENT SHOULD DEVELOP IN WHICH HIGH ACCURACY REQUIREMENTS COULD JUSTIFY THE HIGH COST OF THIS DEVICE, THERE WOULD BE IN THEIR VIEW, NO REASON AS TO WHY THIS DEVICE COULD NOT BE USED FOR A NON-SEMICONDUCTOR MASK REPRODUCTION APPLICATION. (FYI--IN OUR OPINION, THE IMPLICATIONS OF THE FRENCH EXPERT'S QUESTION, AS REPORTED IN REF B, ARE THAT THE US MUST PRESENT SOME DISTINCTION BETWEEN

DEVICES USED TO DUPLICATE MASKS USED IN THE PRODUCTION OF
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SEMICONDUCTOR DEVICES AND THOSE DESIGNED TO DUPLICATE MASKS

USED IN PHOTOGRAVURE APPLICATIONS AND THAT, IF SUCH A DISTINCTION IS NOT POSSIBLE, THE DEVICE WOULD BE CONSIDERED TO BE NON-IL. WE DO NOT ACCEPT SUCH A DISTINCTION. IN OUR VIEW, IL 1355(B)(5), WHICH COVERS THE SUBJECT EQUIP-

MENT, ALSO CONTROLS ALL EQUIPMENT THAT IS SUITABLE FOR USE IN MANUFACTURING SEMICONDUCTOR MASKS AND THAT IL 1355 (B)(5) IS NOT LIMITED TO ITEMS SPECIALLY DESIGNED FOR THE SEMICONDUCTOR MANUFACTURING PROCESS (END FYI).

2) ANSWERS TO QUESTIONS POSED BY GEDEL (REF C) ARE AS FOLLOWS:

A. WE ARE IN ERROR. THE STATED END USER, I.C.C.E., IS NOT AN AVIATION TECHNOLOGY TRADE ORGANIZATION, BUT IS THE RESEARCH DIVISION OF INTREPRINDEA DE PIESE RADIO SI SEMICONDUCTOR BANESASA (I.P.R.S).

B) US AUTHORITIES ARE UNABLE TO ESTABLISH WHETHER THE ROMANIANS HAVE PREVIOUSLY IMPORTED ANY CONTACT PRINTERS SUITABLE FOR THE MANUFACTURE OF SEMICONDUCTOR DEVICES FROM ANY COCOM MEMBER COUNTRY. THEY BELIEVE THAT THOSE CONTACT PRINTERS WHICH MAY BE AVAILABLE AT THIS SUBJECT FACILITY MOST LIKELY ARE OF DOMESTIC AND/OR EASTERN EUROPEAN DESIGN. THE QUALITY OF THOSE DEVICES IS UNKNOWN AS IS THE REASON WHY THE ROMANIANS APPARENTLY DO NOT HAVE EQUIPMENT SUITABLE FOR SEMICONDUCTOR MASK DUPLICATION, AND, THEREFORE, IT APPEARS REASONABLE TO US THAT THE ROMANIANS WOULD DESIRE TO PURCHASE THE SUBJECT EQUIPMENT IN ORDER TO IMPROVE THEIR SEMICONDUCTOR MANUFACTURING CAPABILITIES. ASSUMING THE ROMANIANS HAVE CONTACT PRINTERS WHICH ARE OF POOR DESIGN, PURCHASE OF THE SUBJECT UNIT WOULD SERVE TO INCREASE THEIR PRODUCTION AND/OR THEIR PRODUCT QUALITY.

C) THE SUBJECT PRINTER MUST BE USED IN CONJUNCTION WITH OTHER PRODUCTION EQUIPMENT SINCE, BY ITSELF, IT CAN ONLY CONTRIBUTE TO THE MANUFACTURE OF SEMICONDUCTOR DEVICE. (FYI--IT IS POSSIBLE THAT THIS QUESTION WAS SLANTED TO ASCERTAIN WHETHER THE SUBJECT UNIT MAY BE COORDINATED WITH CONFIDENTIAL

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MASK GENERATION EQUIPMENT. THIS IS POSSIBLE, SINCE THE SUBJECT DEVICE CAN PROBABLY DUPLICATE ANY MASKS PRODUCED AT THIS ROMANIAN FACILITY. HOWEVER, IT SHOULD BE NOTED THAT THIS MASK DUPLICATOR CAN ONLY DUPLICATE A MASK MASTER IT CANNOT IMPROVE THE QUALITY OF THAT MASTER (END FYI)

D) 1. US TECHNICAL EXPERTS CONSIDER THE SUBJECT DEVICE TO BE CLASSIFIED UNDER 1355(B)(5).

2. THE FIRST UNIT WAS PUT ON THE MARKET IN SEPTEMBER

1973.

3. THE SUBJECT UNIT IS CONSIDERED TO BE STANDARD EQUIPMENT SINCE IT IS A SHELF ITEM, NOT A SPECIAL ORDER ITEM.

4) US EXPERTS INTERPRET THIS QUESTION TO MEAN THE FOLLOWING:

WHAT IS THE FINEST GEOMETRY THAT CAN BE RESOLVED IN MAKING A MASK COPY? IN ANSWER, THE SUBJECT UNIT CAN RESOLVE 1 MICRON ON PHOTORESIST AND

2 1/2 MICRONS ON AN EMULSION PLATE.

5) ALL IMAGES WITHIN A 97.8 MM DIAMETER CIRCLE ARE FAITHFULLY PRINTED BY THE SUBJECT DEVICE. THIS CIRCLE REPRESENTS THE LIMITS OF THE EXPOSABLE AREA OF THIS UNIT.

6) PRODUCTION CAPABILITY OF THIS UNIT IS AS FOLLOWS:

WITH EMULSION PLATE - 100-120 PRINTS PER HOUR
WITH PHOTORESIST PLATE - 50-60 PRINTS PER HOUR

7 & 8) SUBJECT PRINTER WILL ACCURATELY REPRODUCE ALL MASK MASTERS WHETHER INTENDED FOR CIVILIAN OR FOR MILITARY APPLICATIONS. IT CANNOT DISTINGUISH BETWEEN EITHER. WE CONSIDER THAT A DISTINCTION BETWEEN MILITARY OR CIVILIAN END-USE APPLICATIONS HAS NO BEARING ON WHETHER THE PRINTER IS OR IS NOT PROPERLY CLASSIFIED UNDER I/L 1355.

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3) WE BELIEVE THE ABOVE IS SUFFICIENT TO ANSWER THE QUESTIONS ASKED IN REFS B AND C. IF ADDITIONAL INFORMATION IS REQUIRED, WE WILL ENDEAVOR TO PROVIDE IT. INGERSOLL

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